This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-76. (Canceled)

77. (New) A gene-targeted, rodent heterozygous for a human mutation of the presenilin-1 (PS-1) gene and heterozygous for an amyloid precursor protein (APP) gene of said rodent having a human FAD Swedish mutation, and a humanized Aβ nucleotide sequence.

78 . (New) A gene-targeted, rodent homozygous for a human mutation of the presenilin-1 (PS-1) gene and homozygous for an amyloid precursor protein (APP) gene of said mammal having a human FAD Swedish mutation, and a humanized Aβ nucleotide sequence.

79. (New) A gene-targeted rodent homozygous for a human mutation of the presenilin-1 (PS-1) gene and heterozygous for an amyloid precursor protein (APP) gene of said mammal having a human FAD Swedish mutation and a humanized Aβ nucleotide sequence.

80. (New) A gene-targeted rodent heterozygous for a human mutation of the presenilin-1 (PS-1) gene and homozygous for an amyloid precursor protein (APP) gene of said mammal having a human FAD Swedish mutation and a humanized Aβ nucleotide sequence.

81. (New) The rodent of claim 77 wherein said mutation of said PS-1 gene is P264L.

82. (New) The rodent of claim 78 wherein said mutation of said PS-1 gene is P264L.

83. (New) The rodent of claim 79 wherein said mutation of said PS-1 gene is P264L.

84. (New) The rodent of claim 80 wherein said mutation of said PS-1 gene is P264L.

85. (New) The rodent of claim 77 wherein said rodent is a mouse.

86. (New) The rodent of claim 78 wherein said rodent is a mouse.

87. (New) The rodent of claim 79 wherein said rodent is a mouse.

88. (New) The rodent of claim 80 wherein said rodent is a mouse.

89. (New) Generational offspring of the rodent of claim 77 wherein said mutant PS-1 gene is expressed.

90. (New) Generational offspring of the rodent of claim 78 wherein said mutant PS-1 gene is expressed.

91. (New) Generational offspring of the rodent of claim 79 wherein said mutant PS-1 gene is expressed.

92. (New) Generational offspring of the rodent of claim 80 wherein said mutant PS-1 gene is expressed.

93. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 77; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent,

wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

94. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 78; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent,

wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

95. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 79; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

96. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 80; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

97. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 89; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

98. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 90; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent , wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

99. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 91; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent , wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

100. (New) A method for screening chemical compounds for the ability to decrease *in vivo* levels of Aβ peptide, said method comprising the steps of:

a) administering said chemical compound to the rodent of claim 92; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent , wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a chemical compound that has the ability to decrease *in vivo* levels of said Aβ peptide.

101. (New) The method of claim 93 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

102. (New) The method of claim 94 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

103. (New) The method of claim 95 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

104. (New) The method of claim 96 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

105. (New) The method of claim 97 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

106. (New) The method of claim 98 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

107. (New) The method of claim 99 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

108. (New) The method of claim 100 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

109. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 77; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

110. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 78; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

111. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 79; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

112. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 80; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

113. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 89; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

114. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 90; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

115. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 91; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

116. (New) A method for identifying a compound for treating Alzheimer's disease comprising the steps of:

a) administering a compound to the rodent of claim 92; and

b) measuring the amount of Aβ peptide in a tissue sample from said rodent, wherein a decrease in the amount of Aβ peptide in said tissue sample is indicative of a compound that can be used to treat Alzheimer's disease.

117. (New) The method of claim 109 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

118. (New) The method of claim 110 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

119. (New) The method of claim 111 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

120. (New) The method of claim 112 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

121. (New) The method of claim 113 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

122. (New) The method of claim 114 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

123. (New) The method of claim 115 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

124. (New) The method of claim 116 wherein said tissue sample is selected from the group consisting of brain tissue, non-brain tissue and body fluids.

125. (New) The rodent of claim 81 wherein codon 264 of the PS-1 gene is changed from CCG to CTT, CTC, CTA, CTG, TTA, or TTG.

126. (New) The rodent of claim 125 wherein codon 264 of the PS-1 gene is changed from CCG to CTT.

127. (New) The rodent of claim 81 wherein codon 265 of the PS-1 gene is changed from AAA to AAG.

128. (New) The rodent of claim 82 wherein codon 264 of the PS-1 gene is changed from CCG to CTT, CTC, CTA, CTG, TTA, or TTG.

129. (New) The rodent of claim 128 wherein codon 264 of the PS-1 gene is changed from CCG to CTT.

130. (New) The rodent of claim 82 wherein codon 265 of the PS-1 gene is changed from AAA to AAG.

131. (New) The rodent of claim 83 wherein codon 264 of the PS-1 gene is changed from CCG to CTT, CTC, CTA, CTG, TTA, or TTG.

132. (New) The rodent of claim 131 wherein codon 264 of the PS-1 gene is changed from CCG to CTT.

133. (New) The rodent of claim 83 wherein codon 265 of the PS-1 gene is changed from AAA to AAG.

134. (New) The rodent of claim 84 wherein codon 264 of the PS-1 gene is changed from CCG to CTT, CTC, CTA, CTG, TTA, or TTG.

135. (New) The rodent of claim 134 wherein codon 264 of the PS-1 gene is changed from CCG to CTT.

136. (New) The rodent of claim 84 wherein codon 265 of the PS-1 gene is changed from AAA to AAG.

137 . (New) The rodent of claim 77 wherein said human mutation of the PS-1 gene is A79V, V82L, V96F, Y115C, E120D, E120K, M139I, M139T, M139V, I143F, I143T, M146I, M146L (A⇒T), H163Y, G209V, A231T, A231V, M233T, L235P, L250S, A260V, L262F, C263R, P264L, P267S, R269H, R278T, E280A, E280G, A285V, E318G, G378E, G384A, L392V, M146L (A⇒C), M146V, H163R, I213T, L286V, A246E, Y115H, T116N, P117L, L171P, E123L, N135D, C410Y, A426P, P436S, M139K, T147I, W165C, L173W,S390I, L166R, S169L, P436Q, S169P, E184D, G209R, L219P, M233L, A409T, E273A, L282R, G378A, N405S, A409T, L424R, a Δ exon 9 splice acceptor site deletion mutation (G⇒T with S290C), a Δ exon 9 splice acceptor site deletion mutation (G⇒A with S290C), a Δ exon 9 Finn 4,555 basepair deletion, a Δ intron 4 splice donor consensus sequence G deletion, a C⇒T mutation at position -48 in the 5' promoter, a C⇒G mutation at position -280 in the 5' promoter, or a A⇒G mutation at position -2818 in the 5' promoter.

138. (New) The rodent of claim 78 wherein said human mutation of the PS-1 gene is A79V, V82L, V96F, Y115C, E120D, E120K, M139I, M139T, M139V, I143F, I143T, M146I, M146L (A⇒T), H163Y, G209V, A231T, A231V, M233T, L235P, L250S, A260V, L262F, C263R, P264L, P267S, R269H, R278T, E280A, E280G, A285V, E318G, G378E, G384A, L392V, M146L (A⇒C), M146V, H163R, I213T, L286V, A246E, Y115H, T116N, P117L, L171P, E123L, N135D, C410Y, A426P, P436S, M139K, T147I, W165C, L173W,S390I, L166R, S169L, P436Q, S169P, E184D, G209R, L219P, M233L, A409T, E273A, L282R, G378A, N405S, A409T, L424R, a Δ exon 9 splice acceptor site deletion mutation (G⇒T with S290C), a Δ exon 9 splice acceptor site deletion mutation (G⇒A with S290C), a Δ exon 9 Finn 4,555 basepair deletion, a Δ intron 4 splice donor consensus sequence G deletion, a C⇒T mutation at position -48 in the 5' promoter, a C⇒G mutation at position -280 in the 5' promoter, or a A⇒G mutation at position -2818 in the 5' promoter.

139. (New) The rodent of claim 79 wherein said human mutation of the PS-1 gene is A79V, V82L, V96F, Y115C, E120D, E120K, M139I, M139T, M139V, I143F, I143T, M146I, M146L (A⇒T), H163Y, G209V, A231T, A231V, M233T, L235P, L250S, A260V, L262F, C263R, P264L, P267S, R269H, R278T, E280A, E280G, A285V, E318G, G378E, G384A, L392V, M146L (A⇒C), M146V, H163R, I213T, L286V, A246E, Y115H, T116N,

P117L, L171P, E123L, N135D, C410Y, A426P, P436S, M139K, T147I, W165C, L173W,S390I, L166R, S169L, P436Q, S169P, E184D, G209R, L219P, M233L, A409T, E273A, L282R, G378A, N405S, A409T, L424R, a Δ exon 9 splice acceptor site deletion mutation (G⇒T with S290C), a Δ exon 9 splice acceptor site deletion mutation (G⇒A with S290C), a Δ exon 9 Finn 4,555 basepair deletion, a Δ intron 4 splice donor consensus sequence G deletion, a C⇒T mutation at position -48 in the 5' promoter, a C⇒G mutation at position -280 in the 5' promoter, or a A⇒G mutation at position -2818 in the 5' promoter.

140. (New) The rodent of claim 80 wherein said human mutation of the PS-1 gene is A79V, V82L, V96F, Y115C, E120D, E120K, M139I, M139T, M139V, I143F, I143T, M146I, M146L (A⇒T), H163Y, G209V, A231T, A231V, M233T, L235P, L250S, A260V, L262F, C263R, P264L, P267S, R269H, R278T, E280A, E280G, A285V, E318G, G378E, G384A, L392V, M146L (A⇒C), M146V, H163R, I213T, L286V, A246E, Y115H, T116N, P117L, L171P, E123L, N135D, C410Y, A426P, P436S, M139K, T147I, W165C, L173W,S390I, L166R, S169L, P436Q, S169P, E184D, G209R, L219P, M233L, A409T, E273A, L282R, G378A, N405S, A409T, L424R, a Δ exon 9 splice acceptor site deletion mutation (G⇒T with S290C), a Δ exon 9 splice acceptor site deletion mutation (G⇒A with S290C), a Δ exon 9 Finn 4,555 basepair deletion, a Δ intron 4 splice donor consensus sequence G deletion, a C⇒T mutation at position -48 in the 5' promoter, a C⇒G mutation at position -280 in the 5' promoter, or a A⇒G mutation at position -2818 in the 5' promoter.